

**Tender Document for  
Supply of SS1 NES Mandrel**



**Satish Dhawan Space Centre SHAR**

Indian Space Research Organisation

Sriharikota

Aug 2018

## Table of Contents

1. Scope of the tender .....	4
1.1. Introduction.....	4
2. General Terms and conditions .....	4
2.1. Instruction to bidders.....	4
2.2. Validity of Offer .....	5
2.3. Cost of Bidding .....	5
2.4. Income tax .....	6
2.5. Project Monitoring .....	6
2.6. Performance bank guarantee .....	6
2.7. Liquidated damage.....	6
2.8. Security deposit.....	6
2.9. Earnest Money Deposit.....	7
2.10. Arbitration .....	7
2.11. Applicable law and jurisdiction .....	7
2.12. Force majeure .....	7
2.13. Guarantee.....	8
2.14. Payment Terms .....	8
2.15. Delivery.....	8
2.16. Packing & Forwarding .....	8
2.17. Exclusion of Tenders.....	8
3. Documents Comprising the Bid.....	9
3.2. Part – I Technical and Un priced Commercial Part .....	9
3.3. Part – II Priced Commercial Bid .....	10
3.4. Bid Submission .....	10
3.5. Bid Evaluation.....	10
4. Equipment and services .....	11
4.1. To be provided by the bidder.....	11
4.2. To be provided by Department.....	12
5. Codes and Standards.....	12
6. General Instructions .....	13
6.1. General Specification related to fabrication .....	13

7.	Specific instructions with respect to individual items .....	14
	List of Tendered items: .....	14
7.1.	Mandrel for SS1 nozzle end segment.....	14
	Mandrel for SS1 nozzle end segment and Accessories .....	14
8.	Thermal Stress Reliving .....	17
8.1.	General instruction for stress reliving.....	17
9.	Transportation.....	17
10.	Surface preparation and Painting.....	17
10.2.	Surface preparation .....	17
10.3.	Painting.....	18
11.	Inspection and Testing.....	18
11.1.	At Bidder's Site .....	18
11.2.	Inspection and Testing at SDSC SHAR .....	19
12.	Summary of Data to be Furnished by Bidder .....	19
12.1.	Along With Technical Bid .....	19
12.2.	Data to Be Furnished By Bidder after the Award of Tender .....	19
13.	Major Milestones.....	20
14.	List of suggested Vendors.....	20
15.	List of Annexure .....	20

### List of tables

Table 1.	Codes and Standards .....	12
Table 1.	List of Tendered Items.....	14

## **1. Scope of the tender**

### **1.1. Introduction**

- 1.1.1. SDSC SHAR is planning to realize NES Mandrel for use during processing of SS1 segments at Solid Propellant Plant.
- 1.1.2. The scope of work under this tender covers fabrication, supply, testing, inspection at manufacturer's work, sand blasting, painting, packing, transportation to SDSC SHAR.

## **2. General Terms and conditions**

### **2.1. Instruction to bidders**

- 2.1.1. One set of tender document along with the drawings is issued. Bidder shall sign and stamp each page of tender as token of his acceptance & submit along with his offer. Document shall be scanned and uploaded in e-procurement portal. In case it is not possible to upload due to higher file size, hard copy of the balance documents (without any price figures) shall be submitted physically in a sealed cover before due date.
- 2.1.2. The proposal shall be completely filled in all respects and shall be submitted together with requisite information. Offer incomplete in any particulars is liable for rejection without any further communication.
- 2.1.3. Bidders shall set their quotations in firm figures and without qualifications or variations or additions in the terms of the Tender documents. Proposal containing qualifying expressions such as "subject to minimum acceptance" or "subject to prior sale" or any other qualifying expressions or incorporating terms and conditions at variance with the terms and conditions incorporated in the Tender documents are liable to be rejected.
- 2.1.4. Cost quoted shall be firm and fixed.
- 2.1.5. Price shall be quoted in Rupees (INR).
- 2.1.6. Bidder should award any part of the work under the scope of this tender to any sub vendor only after obtaining necessary approval from the department. Bidder shall submit relevant information as required by the department. Department has every right to accept or reject the proposal submitted. Approval of the department is no way relieves the bidder from his responsibility and the bidder is wholly responsible for execution of work as per the specifications, terms, and conditions mentioned in this document.
- 2.1.7. Bidder shall indicate clearly such of those works planned to offload to his sub-vendor.
- 2.1.8. The requirements and specifications provided in the document are in addition to the details given in the drawings. The bidder shall consider all the requirements projected in this document along with the drawing specifications. Bidder shall read the drawing along with the requirements provided in this

document.

- 2.1.9. SDSC SHAR shall have the right of inspection and supervision of the manufacturing process adopted by the Bidder for the manufacture of equipment at various stages through their authorized representatives. In case the manufacturing process adopted is not found suitable and commensurate with the desired quality of the equipment, the Bidder will be advised to adopt the correct manufacturing process which will be binding on the Bidder. SDSC SHAR's decision regarding the quality of work and its acceptability shall be final and binding on the Bidder.
- 2.1.10. Defects in the material like fractures, cracks, blow holes, laminations, pitting, etc., are not allowed.
- 2.1.11. Trial suiting of the mandrel with mating component (ISS and centering ring etc) will be carried out at SDSC SHAR.**
- 2.1.12. Arrangements shall be made by the bidder for the inspection and testing by authorized representatives of SDSC SHAR during different stages of its manufacture starting from the raw materials till the completion of works at bidder's site as per the Quality Assurance Plan (QAP).
- 2.1.13. Supplier shall use structural steel (plates) of UT quality and SAIL, Jindal, Essar, Tisco or Vizag steel plant make only.
- 2.1.14. Quote shall be on F.O.R. Sriharikota basis.
- 2.1.15. All Taxes (like GST etc.,) and duties applicable shall be indicated clearly in quotation.
- 2.1.16. Transportation & Transit Insurance are fully in the scope of bidder and the same shall be borne by the bidder.
- 2.1.17. The bidder shall clearly indicate the percentage of GST applicable against each case in their bid.

## **2.2. Validity of Offer**

- 2.2.1. Bid shall remain valid for a period of **SIX** months from the due date of submission of the Bid.
- 2.2.2. The Bidder shall not be entitled during the said period to revoke or cancel his Bid or to vary the Bid except and to the extent required by Department in writing.
- 2.2.3. Bid shall be re-validated for extended period as required by Department in writing.
- 2.2.4. In such cases, unless otherwise specified, it is understood that validity is sought and provided without varying either the quoted price or any other terms and conditions of Bid finalized till that time.

## **2.3. Cost of Bidding**

- 2.3.1. All direct and indirect costs associated with the preparation and submission of

Bid shall be to Bidder's account and the Department will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bid process.

#### **2.4. Income tax**

- 2.4.1. Income tax at the prevailing rate as applicable and if applicable from time to time shall be deducted from the supplier's bills as per Income Tax Act and a certificate issued (TDS Certificate).

#### **2.5. Project Monitoring**

- 2.5.1. Bidder shall submit the status report every 15 days mentioning the status of various activities w.r.t. planned schedule for realization of the items.
- 2.5.2. Bidder shall depute their Project team/ engineers for meetings to review the status and discuss/ resolve minor issues related to project execution at SDSC SHAR/ bidder's site based on mutual agreement on mutually agreeable dates.

#### **2.6. Performance bank guarantee**

- 2.6.1. PBG at 10% of the value of the Purchase Order shall be submitted through bank guarantee from any of the Scheduled / nationalized Banks executed on non-judicial stamp paper of appropriate value within 15 days from the date of acceptance, and shall be valid for a period of sixty days beyond the date for completion of warranty period. Bids received without compliance to this clause will be rejected.

#### **2.7. Liquidated damage**

- 2.7.1. Time is the essence of this order. If the bidder's defined scope of work is not made by the end of delivery period, liquidated damage will be levied @ 0.5 % per week or part thereof subject to a maximum of 10% of value of undelivered stores. Bids received without compliance to this clause will be rejected.

#### **2.8. Security deposit**

- 2.8.1. Bidder shall submit security deposit, within 15 days from the date of order placement, for 10% of the total order value. Security Deposit shall be obtained through Bank Guarantee or fixed deposit receipt from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date of acceptance.
- 2.8.2. In case the bidder fails to furnish the security deposit within the specified date or extended due date, the Purchase Order/Contract shall be cancelled, and the EMD, if any, made earlier shall be forfeited, and, in addition, appropriate penal action will be considered.
- 2.8.3. Central PSUs/PSEs/Autonomous Bodies shall be exempted from the payment of Security Deposit, and instead, an Indemnity Bond shall be submitted by them in lieu of the Security Deposit.

2.8.4. Bids received without compliance to this clause will be rejected.

## 2.9. Earnest Money Deposit

- 2.9.1. The Earnest Money Deposit (EMD) of **Rs.1,30,000/-** (One lakh thirty thousand rupees only), refundable (Without interest), should be necessarily accompanied with the Technical Bid of the agency in the form of Demand Draft/Pay Order/Banker's Cheque drawn in favour of Accounts Officer, SDSC SHAR, Sriharikota failing which the tender shall be rejected summarily.
- 2.9.2. The DD/PO/BC towards EMD shall be enclosed along with Technical Bid. In case, if it is enclosed with Price Bid, the offer will not be considered.
- 2.9.3. The EMD in respect of the agencies which do not qualify the Technical Bid (First Stage)/Financial Bid (Second competitive stage) shall be returned to them without any interest. However, the EMD in respect of the successful tenderer shall be adjusted towards the Security Deposit.
- 2.9.4. **Note:** Foreign vendors, registered vendors (Through e-procurement portal) or vendors who applied for renewal of registration, Central PSU/PSEs/Autonomous Bodies Micro and Small Enterprise, KVIC, National Small Industries Corporation etc., shall be exempted from the payment of EMD.

## 2.10. Arbitration

- 2.10.1. In the event of any question, dispute or difference arising under these conditions of any condition in the purchase order or in connection with this contract, (except as to any matters the decision of which is specially provided for by these conditions) the same shall be referred to the sole arbitration of the Head of the Purchase office or of some other person appointed by him. The arbitration shall be conducted with in India as per Arbitration & Conciliation Act 1996 and the applicable language shall be English. The arbitrator may be a Retired Judge or a Government Servant or any other responsible person, that he had to deal with matter to which the contract is related or that in the course of his duties, he has expressed views on all or any of the matters in dispute or differences. The award of the Arbitrator shall be final and binding on the parties of this contract.

## 2.11. Applicable law and jurisdiction

- 2.11.1. The laws of India shall govern this contract for the time being in force. The Courts of Andhra Pradesh, India only shall have jurisdiction to be with and decide any legal matters or disputes what so ever arising out of the contract.

## 2.12. Force majeure

- 2.12.1. Should a part or whole work covered under this agreement be delayed due to reasons of Force Majeure which shall include legal lockouts, strikes, riots, civil commotion, fire accident, quarantines, epidemic, acts of God and Government, freight embargoes, the completion period for work, plant or equipment referred to in this agreement be extended by a period not in excess of the duration of such Force Majeure. The occurrence shall be notified by the bidder within

reasonable time.

### 2.13. Guarantee

- 2.13.1. The items shall be guaranteed against any manufacturing defects for a period of 12 months from the date of acceptance at SDSC SHAR. For defects noticed during the guarantee period, replacement / rectification should be arranged free of cost within a reasonable period of such notification. Bids received without compliance to this clause will be rejected.

### 2.14. Payment Terms

- 2.14.1. Our standard payment term is 100% within 30 days after receipt and acceptance of individual items at SDSC SHAR and submission of PBG as per clause no. 2.6.1
- 2.14.2. Wherever advance payment is requested, Bank Guarantee from any Nationalized Bank/Scheduled Bank should be furnished. In case of advance payments, if the bidder is not supplying the material within the delivery schedule, interest will be levied as per the Bank Lending Rate plus 2% penal interest.
- 2.14.3. Interest will be loaded for advance payments/stage payments as per the lending rate of Bank and will be added to the landed cost for comparison purpose if required. In case of different milestone payments submitted by the parties, a standard and transparent methodology like NPV will be adopted for evaluating the offers.

### 2.15. Delivery

- 2.15.1. Delivery date is essence for this tender. Bidder shall adhere to the delivery date mentioned in this tender and the same shall be confirmed along with the offer. In case if the bidder is unable to meet the delivery schedule, the offer is liable for rejection. Delivery details as given in below table.

Sl. No.	Description	Drawing nos	Qty (set.)	Delivery Schedule
1	Mandrel for SS1 nozzle end segment.	10-03-SSLV-03-015/A1/R1 (2 sheets), 10-03-SSLV-09-06/A1, 10-03-SSLV-09-01/A1-2 sheets	1	4 months from the date of award of purchase order

### 2.16. Packing & Forwarding

- 2.16.1. The bidder will be held responsible for the items being sufficiently and properly packed for transport by rail, road, sea or air, to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expenses of the Contractor.

### 2.17. Exclusion of Tenders



The following tenders shall be summarily rejected from the procurement process:

- 2.17.1. Tenders of bidders who have been removed from the vendor list or banned/debarred from having business dealings.
- 2.17.2. The tenders which depart from the requirements specified in the tender document or which contain false information.
- 2.17.3. Tenders of bidders who don't meet the bidder qualification requirement given in Annexure – 1.
- 2.17.4. Tenders of bidders who don't submit the compliance statement.

### **3. Documents Comprising the Bid**

This is e-procurement tender. All the documents need to be scanned and attached to the bid under "documents solicited from bidder" form.

- 3.1.1. Offers shall be sent online only using standard digital signature certificate of class III with encryption / decryption. The tenders authorized online on or before the open authorization date and time only will be considered as valid tenders even though the bids are submitted online.
- 3.1.2. The bidder must authorize bid opening within the time stipulated in the schedule. Otherwise the online bid submitted will not be considered for evaluation.

**On-line bids shall consist of the following:**

#### **3.2. Part – I Technical and Un priced Commercial Part**

- 3.2.1. Technical and un-priced commercial part shall comprise the following documents/information. All the documents shall be scanned and uploaded in the ISRO e-procurement portal.
- 3.2.2. Submission of bid letter along with one set of tender document duly signed and stamped as token of acceptance. Scanned copy shall be uploaded in the ISRO e-procurement portal.
- 3.2.3. Any other relevant document, bidder desires to submit.
- 3.2.4. Confirmation w.r.t bid qualification criteria as per Annexure-1.
- 3.2.5. Compliance statement as per Annexure-2.
- 3.2.6. Quality Assurance Plan as per Annexure-3. Bidder shall confirm the broad guidelines mentioned in QAP. However, this is only indicative. Detailed QAP shall be submitted by the bidder after placement of order with respect to each item based on manufacturing process plan.
- 3.2.7. Deviations, if any, w.r.t technical and commercial terms & conditions shall be clearly brought out under deviation list Annexure-4. If deviations are not listed in the given format, it will be presumed that the bidder is adhering to all the specification and terms & conditions given in this document. Deviations listed elsewhere in the tender document will not be considered.

3.2.8. Confirmation w.r.t price bid schedule as per Annexure-5.

**Note: All the above documents shall be uploaded in the ISRO e-procurement portal.**

### **3.3. Part – II Priced Commercial Bid**

Priced commercial bid shall contain schedule of prices and shall be filled in ISRO e-procurement portal. No deviations, terms and conditions, assumptions, discounts etc. shall be stipulated in price bid. Department will not take cognisance of any such statement and may at their discretion reject such bids.

### **3.4. Bid Submission**

- 3.4.1. Bid shall be submitted in two parts
- 3.4.2. Part -1 Techno-Commercial Part of the Bid
- 3.4.3. Part-2 Price Part of the Bid
- 3.4.4. Offers should be submitted On-line using standard digital signature of class -3 with encryption/decryption options.
- 3.4.5. The tenders authorized online on or before the open authorization date and time will only be considered as valid tenders.
- 3.4.6. Prices shall be mentioned in the space/column provided in the ISRO e-procurement portal only for such purpose.
- 3.4.7. Physical copy of the bid will be accepted only in case if the file size is bigger and not possible to upload the same. In such case, the hard copy shall be submitted within due date. Documents received after due date will not be considered.
- 3.4.8. Prices quoted should be on F.O.R. Sriharikota basis.
- 3.4.9. The Department will not pay separately for transit insurance and same shall be included in the cost quoted by the Bidder.
- 3.4.10. All risks in transit shall be exclusively borne by the contractor. The department shall pay only for such items that are actually received in good condition in accordance with the purchase order.
- 3.4.11. Bids duly filled in by the Bidder should invariably be submitted as stipulated in the e-procurement portal.
- 3.4.12. Department shall open Part – I of the bid on the due date of opening. Price Bid (Part-II) of the technically and commercially acceptable bids shall be opened at a later date. The same will be intimated to the qualified bidders.
- 3.4.13. Department reserves the right to reject any or all the Bids without assigning any reasons thereof.

### **3.5. Bid Evaluation**

- 3.5.1. The bidder shall provide all the relevant data/information/details required for evaluating the bid technical and commercially in the specific formats enclosed with the tender. Apart from this, Bidder is free to add any other relevant information.

- 3.5.2. During evaluation, Department may request Bidder for any clarification on the bid/ additional documents/ information required. Bidder shall submit all clarifications/ additional documents/ information requested in original. If not submitted within the stipulated time department has right to reject such bids.
- 3.5.3. The complete scope of work is defined in the Tender document.
- 3.5.4. In case Bid does not fully comply with the requirement of Tender document and the bidder stipulates deviations to the clauses of the tender, which are unacceptable to the Department, the Bid will be rejected.
- 3.5.5. Performance of Bidder on similar nature of works executed/ under execution shall be taken into consideration before selecting the Bidder for opening his price bid.
- 3.5.6. The time schedule for completion is given in the Tender document. Bidder is required to confirm the completion period unconditionally.
- 3.5.7. **Price bid of the bidder who meets all the technical and commercial requirement given in this tender, will be considered.**

#### **4. Equipment and services**

##### **4.1. To be provided by the bidder**

The following equipment and services shall be made available by the bidder:

- 4.1.1. Quality assurance plan for manufacturing and testing w.r.t all the systems/sub-systems shall be submitted along with manufacturing process plan. Preliminary QAP sample covering basic requirements is given in Annexure – 3.
- 4.1.2. 2 sets of Quality records, history dockets, as built drawings incorporating modifications, if any and all documentation related to manufacturing, inspection and testing.
- 4.1.3. Detailed manufacturing process plan including part drawings, fit-up procedure, fabrication plan and machining procedure shall be submitted within 7 days from the placement of order.
- 4.1.4. Manufacture, Supply, testing, surface preparation, painting, forwarding and transportation of the items to SDSC SHAR.
- 4.1.5. All items e.g. Nuts, Bolts, Washers, Eye-bolts, Guide pins etc provided in the tender document and approved drawing is included in the Bidder's scope. No separate claim shall be entertained, in this respect.
- 4.1.6. The details shown in the drawing shall be verified and changes if any required shall be incorporated with written clearance of the department.
- 4.1.7. **Minor changes if any suggested, shall be incorporated at no extra cost by the party.**
- 4.1.8. For standard bought out components whose details were furnished in the tender or drawing, the contractor shall strictly adhere to the respective makes

only.

- 4.1.9. In case Bidder suggests any changes in the Make/vendor, same shall be supported with complete technical details including need for such changes proposed. Alternate make suggested by the bidder shall be better than the make suggested in this tender document. Department has the right to accept or reject the changes in the suggested make/vendors list.
- 4.1.10. Instruments required for carrying out inspection viz., Pi-tapes, Ultra sonic thickness measuring device, Vernier calipers, Screw gauge, Surface roughness tester, etc., shall be made available during inspection by the bidder.
- 4.1.11. Shop inspection and tests as per specifications in QAP and as mentioned in this section shall be arranged by the bidder to enable department personnel to inspect. Wherever not specified, the shop inspection tests shall be as per recent codes applicable. In the event of waiver to any inspection / test as intimated by DEPARTMENT, bidder shall submit test certificates for DEPARTMENT's approval.

#### 4.2. To be provided by Department

The following equipment and services will be made available by the Department:

- 4.2.1. Unloading of items at SDSC SHAR.

### 5. Codes and Standards

All equipment, systems and works covered under this specification shall comply with all currently applicable statutes, regulations, standards and safety codes in the locality where the equipment will be installed.

In particular, the latest editions of the following standards are applicable.

**Table 1. Codes and Standards**

(i)	Steel for general structural purposes	IS 2062
(ii)	Rolled sections and special sections	IS:808, IS:1161, IS:1173, IS:1252, IS:1730, IS:1731, IS:1732, IS:1863, IS:1864, IS:2314,

Other national standards established to be equivalent or superior to the codes and standards specified are also acceptable.

In the event of any conflict between the codes and standards referred to in the specification and the requirements of this specification, the more stringent of these requirements shall govern.

Unless indicated otherwise, all codes and standards referred to in this enquiry specification shall be understood to be the latest version on the date of offer made by the bidder.

## 6. General Instructions

### 6.1. General Specification related to fabrication

- 6.1.1. The entire fabrication activity shall be performed in a planned / sequential manner to achieve desired dimensional/geometrical tolerances specified in the drawing.
- 6.1.2. The effective throat thickness of a fillet weld shall be shortest distance from the root to face of the diagrammatic weld.
- 6.1.3. Pre heat and inter-pass temperature shall be maintained as required on either side of point of welding as per the following guidelines. However, the actual pre and inter pass temperature has to be calculated based on material specification and thickness.

Thickness of part at point of welding	Minimum pre-heat and inter-pass	
	Low hydrogen welding electrode	Other than low hydrogen welding electrode
Material	IS:2062 - 1992	
Up to 20 mm	Room temperature	Room temperature to 20°C
20-40 mm	20-65°C	65°C
40-63 mm	65-110°C	110°C
Over 63 mm	110-150°C	150°C

- 6.1.4. Welding shall be done by qualified welder according to IS 817- 1966. WPS and PQR shall be prepared as per ASME Section IX.
- 6.1.5. All weld joints shall be as per IS 823.
- 6.1.6. All the welds are of 12mm fillet unless otherwise specified.
- 6.1.7. All welds shall be ground.
- 6.1.8. 100% DP test on all welds for root and final weld pass shall be carried out.
- 6.1.9. 100% Ultrasonic test for plates of thickness above 20mm. Test reports shall be made available during stage / final inspection.
- 6.1.10. 100% Radiography test for all butt welds. Test reports shall be made available during stage / final inspection.
- 6.1.11. The entire fabrication activity shall be performed in a planned / sequential manner to achieve desired dimensional / geometrical tolerance specified in the drawing or functional requirement mentioned in this document. It is suggested to add sufficient number of fixtures and tools to control the distortion during welding process.
- 6.1.12. In assembling and joining parts of a structure or of build-up member the procedure and approved sequence of welding shall be followed such as to avoid distortion and minimize shrinkage stress.
- 6.1.13. Dimensions shown in the drawing are final acceptance dimensions. Any deviation is liable for rejection. Suitable allowances for machining and thinning

due to fabrication process shall be added to arrive at material sizes. Bidder is wholly responsible for realizing the finished product.

- 6.1.14. Proper fabrication sequence shall be followed to ensure adequate weld size after machining with respect to welds available in machined surfaces.
- 6.1.15. Dimensional tolerance wherever not specified shall follow the standard open dimension tolerances provided in the drawing.
- 6.1.16. Wherever welded attachments are used to facilitate fabrication, same shall be removed carefully by cutting or chipping and surface of material shall be finished smooth by grinding. As far as possible, hammering shall be avoided.
- 6.1.17. Edge preparation shall be carried out for all joints as mentioned in the drawing or as per standard fabrication procedure.
- 6.1.18. Surfaces that may become inaccessible after fabrication shall be prepared and painted while accessible, with two coats of Red oxide.
- 6.1.19. Deviations, if any observed during fabrication shall be brought to the Department's notice immediately.

## 7. Specific instructions with respect to individual items

### List of Tendered items:

The scope of work covers fabrication, supply, painting, inspection and testing at bidder's works, packing for shipment, transportation and delivery at our site for the following items.

**Table 1. List of Tendered Items**

S. No.	Title	Drawing No.	Quantity
1.	<b>Mandrel for SS1 nozzle end segment.</b>	10-03-SSLV-03-015/A1/R1 (2 sheets)	01 set

Detailed instructions are provided below. Additional requirements, if any shall also be considered apart from the details given in the drawing.

### 7.1. Mandrel for SS1 nozzle end segment

Drawing No.	Title	Quantity
10-03-SSLV-03-015/A1/R1 (2 sheets)	<b>Mandrel for SS1 nozzle end segment and Accessories</b>	01 set.

**Following are the list of items in the SET of Mandrel for SS1 nozzle end segment and accessories:**

S. No.	Title	Drawing No.	Quantity
1.	Mandrel for SS1 nozzle end segment	10-03-SSLV-03-015/A1/R1 (2 sheets)	01 No.

2.	Mandrel Transportation system with End connectors for SS1 nozzle end Segment Mandrel	10-03-SSLV-09-001/A1 (2 sheets)	01 No.
3.	Mandrel Support stand for SS1 nozzle end Segment mandrel	10-03-SSLV-09-006/A1	01 No.

**Specific to Mandrel for SS1 Nozzle End Segment (Drawing No.: 10-03-SSLV-03-015/A1/R1 - 2 sheets):**

- 7.1.1. All dimensions shown in the drawing are final machined dimensions.
- 7.1.2. All welds subjected to pressure are to be U.T Quality as per Appendix – 12 of ASME: Section – VIII – Division – I
- 7.1.3. Typical joints shall be 100% radiographed.
- 7.1.4. Inlet and outlet pipe welds shall be DP tested.
- 7.1.5. All the welds are of 12mm size fillet unless otherwise specified.
- 7.1.6. Seamless pipes and fittings of Schedule - 160 shall only be used for Part No.: 11, 12, 13, 14, 14A & 17.
- 7.1.7. Longitudinal and circumferential seam welds for outer and inner shell shall be radiographed.
- 7.1.8. Longitudinal and circumferential welds are to be staggered for making the outer and inner shells.
- 7.1.9. Part No.: 22 is a baffle welded to the inner shell in the form of helix.
- 7.1.10. Part No. 3, 4, 18 & 22 shall be fabricated together - Inner shell & baffle assembly.
- 7.1.11. Machining of Inner shell & baffle assembly shall be carried out for further assembly with Part No.: 2 – Outer shell.
- 7.1.12. Inner shell & baffle assembly shall be inserted into Part No.: 2 from the aft end, positioned at the specified location and welded as shown in the drawing.
- 7.1.13. Part No.: 1, 7, 6 & 5 shall be welded to the Outer shell subsequently.
- 7.1.14. Grooves shall be cut on Part No.: 2, 5 & 6 for assembling fins at these locations.
- 7.1.15. Part No.: 21 – Fins shall be rough machined and welded to the grooves in Part No: 2, 5 & 6. Suitable fixtures shall be utilized to ensure proper positioning and of the fins on the Part No.: 2 – Outer shell.
- 7.1.16. Stress relieving of the mandrel to be carried after completion of fabrication and before final machining operations.
- 7.1.17. **Final machining of the entire mandrel surface i.e., Part No.: 8, 1, 7, 6, 5, 2, 19, 20 & 21 to be carried out in a single setting (in-situ) after completion of fabrication and stress relieving.**

- 7.1.18. Suitable CNC machine with automatic indexing shall be used for completing the final machining of mandrel core and fin area in a single setting. The machine shall accommodate the entire job length and machining shall be carried out on the entire length.**
- 7.1.19. Partial machining and re-setting of the job during final machining is not acceptable.
- 7.1.20. All outer surfaces of the mandrel shall be completely machined.
- 7.1.21. The outer surface of the mandrel shall be buffed to a mirror sheen after completion of machining operations.
- 7.1.22. The mandrel shall be offered for inspection ON MACHINE after completion of machining operations.
- 7.1.23. De-rusting and de-scaling of steel shall be carried out thoroughly to a metallic sheen on all surfaces.
- 7.1.24. Part No.: 20 shall be blackened.
- 7.1.25. All the machined surfaces shall be applied with anticorrosive varnish to protect the surfaces. Mandrel shall not be painted.
- 7.1.26. Jacket shall be tested for a pressure of 4.5ksc, as per IS: 2825-1969 at Bidder's site. After pressure test, DP test shall be carried out by bidder. During DP test, if any defect is noticed, the same shall be rectified by the bidder.
- 7.1.27. Outer surface of the mandrel shall be covered completely with 10mm thick Compressed Wool Felt material during transportation.
- 7.1.28. Mandrel shall be assembled with the end connectors and transported in the mandrel transportation stand.

**Specific to Mandrel Transportation system with End connectors for SS1 nozzle end Segment Mandrel (Drawing No.: 10-03-SSLV-09-001/A1 - 2 sheets):**

- 7.1.29. All the welds are of 6mm size fillet unless otherwise specified.
- 7.1.30. Part No.: 10 (Sheet - 2) shall be used for handling empty structure only.
- 7.1.31. Part No.: 4 (Sheet - 1) / Part No.: 9 (Sheet - 2) shall be used for handling structure along with mandrel.
- 7.1.32. Included angle between the handling slings connected to Part No.: 10 (Sheet - 2) or 4 (Sheet - 1) / Part No.: 9 (Sheet - 2) shall not cross 90°.
- 7.1.33. ID of part no.32 and front face of part no. 30 of dwg. no. 10-03-SSLV-09-001/A1 (sheet-2) shall be machined.
- 7.1.34. The structure shall be fabricated as per the details provided in the drawing.
- 7.1.35. Proper interfacing and assembly of the structure with the mandrel shall be ensured by the bidder.
- 7.1.36. Mandrel transportation stand along with the end-connectors shall be assembled



with the mandrel during transportation of the mandrel.

**Specific to Mandrel Support stand for SS1 nozzle end Segment mandrel (Drawing No.: 10-03-SSLV-09-006/A1):**

- 7.1.37. Top face of Part No.: 8 shall be pre-machined before fabrication. ID of Part No.: 8 shall be machined after completion of fabrication.
- 7.1.38. Perpendicularity of Top face of Part No.: 8 with respect to the axis shall be ensured.
- 7.1.39. OD, ID and bottom face of Part No.: 1 shall be machined.
- 7.1.40. OD, ID and top face of Part No.: 6 shall be machined.
- 7.1.41. Positional tolerance of holes provided in Part No.: 8 shall within 0.2mm and tolerance on PCD shall be within 0.2mm with respect to axis.
- 7.1.42. Vertical support stand shall be assembled with the mandrel during interface checks in the presence of department inspectors and proper assembly of the structure with the mandrel shall be ensured.

## **8. Thermal Stress Reliving**

### **8.1. General instruction for stress reliving**

- 8.1.1. Stress reliving shall be carried out on the mandrel before commencing machining operations.
- 8.1.2. Stress Relieving cycle shall be decided based on the thickness and as per ASME Sec VIII Div. 1.
- 8.1.3. Bidder shall submit the Stress relieving cycle for review and approval.
- 8.1.4. Natural gas fired/Oil fired/electric furnace shall only be used.
- 8.1.5. Baffles shall be used to avoid deposit of residues on the job.
- 8.1.6. Entire job shall be heated at once.
- 8.1.7. Local heating using induction coil is not acceptable.
- 8.1.8. Temperature recorders shall be used during stress relieving and data shall be submitted for review.
- 8.1.9. Temperature Chart shall be submitted for review during inspection.

## **9. Transportation**

- 9.1.1. Items shall be transported to SDSC SHAR after completion.

## **10. Surface preparation and Painting**

- 10.1.1. Specifications for surface preparation and painting in this section shall be followed for all items:

### **10.2. Surface preparation**

- 10.2.1. All the surfaces of steel work to be painted shall be thoroughly cleaned of all loose mill scale, rust, grease, dirt and other foreign matter. The workmanship shall generally conform to the requirements of IS 1477-Part-I.
- 10.2.2. De-rusting and de-scaling of steel shall be carried out thoroughly to a metallic sheen on all surfaces.

### 10.3. Painting

All the exposed carbon steel surfaces shall be painted as per following:

- 10.3.1. Surface Preparation: Cleaning by wire brush or power tools to remove any loose dirt or mill scales from the surface.
- 10.3.2. Sand blasting shall be carried out to clean the surfaces before painting operation.
- 10.3.3. Spray painting shall be carried out for primer as well as subsequent coats.
- 10.3.4. Primer: One coat of zinc rich primer with red oxide and zinc phosphate pigments to achieve total DFT of 60 to 65 micron.
- 10.3.5. Final Coat: Two coats of epoxy paint of total 115 to 125 micron DFT.
- 10.3.6. Color – On outer and inner surface shall be Jet Black (RAL No: 9005).
- 10.3.7. Total DFT shall be 175 microns (min.)
- 10.3.8. Any intermediate cleaning required between successive coats of paint shall also be carried out as per manufacturer's standard.
- 10.3.9. Final coat of paint shall be applied after load testing at our site.
- 10.3.10. Necessary tools like compressor, spray gun and consumables shall be provided by the bidder.
- 10.3.11. Proper masking shall be carried out where ever required. All welds shall be masked.

## 11. Inspection and Testing

### 11.1. At Bidder's Site

- Mandrel shall be offered for inspection on machine after completion of final machining operations.
- The mandrel fin surface shall be **3D scanned using CMM scanner** after completion of final machining. The scanned surface shall be compared with the standard 3D model and report to be submitted. Minimum 3 nos of sections at equispaced locations in the fin area shall be compared with standard model at corresponding locations. Maximum deviation locations shall be clearly indicated separately in the report.
- Instruments required for carrying out inspection viz., Pi-tapes, Ultra sonic thickness measuring device, Vernier callipers, Screw gauge, **surface roughness tester**, etc., shall be made available during inspection.

- Shop inspection and tests as per specified codes and standards shall be arranged by PARTY, to enable the PURCHASER / ENGINEER to inspect the structural steel works. In the event of waiver to any inspection / test as intimated by PURCHASER, PARTY shall submit test certificates for PURCHASER's approval.

*The following are the minimum tests that shall be carried out:-*

- Welding procedure & welder / welding operator's performance qualification.
- 100% DPT for root and final weld passes.
- 100% UT for plate thickness of 20 mm or above.
- Visual and dimensional inspection

## 11.2. Inspection and Testing at SDSC SHAR

- 11.2.1. Trial suiting of the mandrel, as listed in this tender, with the mating component (ISS, centering ring, etc) will be carried out at SDSC SHAR. **This is in the scope of department.** In case of any mismatch during trail suiting, items are liable for rejection.

## 12. Summary of Data to be Furnished by Bidder

### 12.1. Along With Technical Bid

- 12.1.1. Deviations from Technical Specification, if any shall be brought out clearly in Annexure – 4. Copy of the same shall be uploaded along with the bid.
- 12.1.2. Compliance Statement for Clause by Clause compliance.
- 12.1.3. Bidder shall confirm / fill all enclosed Annexures shown in Section 15 and submit along with the offer.

### 12.2. Data to Be Furnished By Bidder after the Award of Tender

- 12.2.1. Detailed Manufacturing process plan, part drawings, fit-up procedure, fabrication plan and machining procedure for the item within the time frame stipulated in the tender specification.
- 12.2.2. Quality Assurance Plan (QAP) based on the proposed manufacturing process. All the inspection requirements specified in this document shall be incorporated in the QAP.

#### **During fabrication**

- 12.2.3. Raw materials identification & physical and chemical test certificates for all materials used in manufacturing of the equipment.
- 12.2.4. Details of stage wise inspection and rectification records if any for fabricated items and machined articles.

#### **After completion of fabrication**

- 12.2.5. DP reports for root and final weld passes.
- 12.2.6. UT test reports for plate thicknesses 20 mm or above.

12.2.7. Radiography reports.

12.2.8. CMM 3D scanner report along with surface comparison and scan file.

12.2.9. Dimensional inspection report.

12.2.10. Stress relieving chart.

### 13. Major Milestones

S. No.	Description	Time (in days)
1.	Placement of P.O	T
2.	Submission of Detailed Manufacturing process plan (MPP) and Quality Assurance Plan (QAP).	T+7
3.	Approval MPP and QAP.	T + 14
4.	Raw material receipt at Bidder site.	T + 21
5.	Receipt of items at SDSC SHAR	T + 120

### 14. List of suggested Vendors

S. No.	Category	Item Description	Suggested Vendor
1.	Mechanical	Plate raw material	M/s Jindal/Sail/Tisco/Essar/VSP
2.	Mechanical	fasteners and washers	Unbrako/DFL/TVS
3.	Mechanical	Forged items	Bharat Forge
4.	Misc	Paints and Primer	Berger/Asian/Nerolac
5.	Other items	Approval to be obtained from department before placement of order.	

### 15. List of Annexure

Reference	Description
Annexure-1	Bid qualification criteria
Annexure-2	Compliance Statement
Annexure-3	QAP – Sample format
Annexure-4	Deviations
Annexure-5	Price Bid Schedule



**Bid Qualification Criteria for  
Fabrication and Supply of SS1 NES Mandrel**

Bidders who are qualifying/meeting following Technical and Financial capabilities are eligible to participate in the bid for Fabrication and supply of SS1 NES mandrel. Bidder shall furnish all the details with documentary proof and submit the same along with quotation. Bids of the parties which are not meeting the following criteria will not be considered for evaluation and will be rejected without seeking any further clarifications. Bidder shall furnish the details of their resources in factory like manpower, machinery, quality system etc., for department to assess their capability.

S.No.	Criteria / Requirement	Reply / Eligibility from M/s....
<b>Technical Qualification Requirements:</b> The bidder should meet the following technical qualifying requirements and shall submit relevant certificates/data to establish his credentials along with the technical bid.		
1.	Bidder should have at least 5 years of experience in execution of fabrication works. List of such works shall be enclosed.	
2.	The Bidder should be an organization with previous experience in having executed at least one contract worth min <b>54</b> lakh or two contracts of <b>min 40</b> lakhs each, involving manufacture, supply, testing of structures during last 5 years. Enclose list of works executed with details and PO copy.	
3.	The Bidder shall have in-house facility for carrying out machining of the entire outer surface of the mandrel, including fin and core in a single setting. Suitable CNC machine which can accommodate the job as per attached <b>dwg no.10-03-SSLV-03-015/A1/R1 (2 sheets)</b> shall be available with the bidder. Technical details of the CNC machine along with the achievable accuracies (linear, radial and angular) shall be submitted. In case it is planned to outsource, details of sub-vendor along with his capabilities including technical details of the machine along with the achievable accuracies (linear, radial and angular) shall be submitted.	
4.	The Bidder shall have qualified fitters and welders team.	
5.	The bidder shall have level II qualified persons for carrying out weld inspection. If outsourced, details shall be furnished.	
6.	The Bidder shall have equipment for handling structures weighing more than 18t. List of equipments shall be enclosed.	
7.	The bidder shall have facility for carrying out sand blasting of minimum 1.7m Dia and 8.5m high jobs.	

<b>Financial Qualification Requirements:</b>		
The bidder should also meet the following financial qualification requirements:		
8.	The Bidder should have <b>average annual turnover</b> of not less than a value of Rs. <b>80 lakhs</b> per year during the last three years ending 31st March 2018. Audited annual financial accounts report shall be submitted for the last three years ending 31st March 2018.	
9.	Bidder should possess a current Solvency Certificate from Nationalized Bank for an amount of not less than Rs. 10 Lakh. Solvency certificate issued should not be earlier than 6 months from due date for bid submission. If solvency certificate is not enclosed along with bid, bid is liable for rejection.	
10.	IT return shall be submitted for last 3 years.	

## 1. Important notes:

- 1.1. In the above technical qualification, bidder shall clearly indicate the list of sub vendors in case of outsourcing if any. The same shall be evaluated and approved by purchaser.
- 1.2. Bidder shall furnish all the above details fully and explicitly. The Bidder shall enclose the documents in support of the details provided in the bidder qualification.
- 1.3. Please note that the "BID" without above mentioned documents/information in support of the eligibility criteria will be summarily rejected.
- 1.4. No further clarifications will be sought in this regard.

## 2. Bid Selection Procedure and Process of Pre-Qualification

Step-1: Technical Bids will be opened and scrutinized for meeting all technical specification and supply conditions

Step-2: Short listing based on documents submitted, satisfying all the eligibility criteria given above by the Bidder or individual along with their Bid / application. (Non-submission of any document as given in above list within stipulated time leads to rejection of Bid)

Step- 3: Subsequently Bidder's competency, their technical achievements and financial status will be evaluated suitable for this project.

Step- 4: If required, visit will be made to their factory of the Bidder by technical team (ISRO) for accessing the capability of manufacturer.

Step- 5: Visit to sites, wherever required by technical team (ISRO)

*ISRO-SHAR reserves right to verify the information/data furnished by Bidder. If the same is*

*found as fault or with any deviation the bid will be rejected. Only those Bidders who are found suitable & meeting all above qualification Criteria/requirements will be finally qualified for opening the Price Bids for evaluation.*



**COMPLIANCE STATEMENT FORM**

S. No.	Description	Bidder's compliance Yes/No
<b>General terms</b>		
1.	Confirm that the entire scope of work as given in the tender specification is considered for quoting the price. All deviations shall be brought out separately. In the absence of deviations list, it will be presumed that all the specification given is adhered to.	
2.	Fabrication, machining, painting, testing, packaging and supply of SS1 nozzle end segment mandrel as per the details given in Tender, Drawings and annexure.	
3.	<b>PBG</b> at 10% of the value of the Purchase Order shall be submitted through bank guarantee from any of the Scheduled / Nationalized Banks executed on non-judicial stamp paper of appropriate value within 15 days from the date of acceptance, and shall be valid for a period of sixty days beyond the date for completion of warranty period.	
4.	Bidder shall submit <b>security deposit</b> , within 15 days of Order Acknowledgement, for 10% of the total order value. Security Deposit shall be obtained through Bank Guarantee or fixed deposit receipt from any of the Scheduled / Nationalized Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date of acceptance.	
5.	If the supplies are not made by the end of delivery period, <b>liquidated damage</b> will be levied @ 0.5 % per week or part hereof subject to a maximum of 10% of total order value.	
6.	The <b>Earnest Money Deposit(EMD)</b> of Rs.1,30,000/- (One lakh thirty thousand rupees only), refundable (Without interest), should be necessarily accompanied with the Technical Bid of the agency in the form of Demand Draft/Pay Order/Banker's Cheque drawn in favour of Accounts Officer, SDSC SHAR, Sriharikota failing which the tender shall be rejected summarily.	
7.	Un-priced copies of all Purchase Orders of bought out components shall be submitted after placement of order.	
8.	Bidder shall submit the project status report every 15 days mentioning the status of fabrication activity w.r.t. drawing numbers and actual photo graphs.	
9.	Bidder shall depute their Project team/ engineers for Monthly meeting to review the status and discuss/ resolve minor issues related to project execution at SDSC SHAR/ bidder's site based on mutual agreement on mutually agreeable dates.	
10.	Offer shall be valid for <b>Six months</b> from the due date for submission	

## Tender Document for SS1 NES Mandrel

## Annexure-2

S. No.	Description	Bidder's compliance Yes/No
	of the Bid.	
11.	Deviation table giving the details of deviations / with Nil report is enclosed.	
12.	Price bid of the bidder who meets all the technical and commercial requirement given in this tender, will be considered.	
13.	Other than the deviations listed in the deviation table, all other specifications mentioned in the tender are confirmed.	
14.	The bidder shall <b>deliver SS1 nozzle end mandrel within 4 months from the date of award of purchase order</b> . Bidder shall confirm the same.	
15.	Bidder shall adhere to the major milestones listed in the tender document. Deviations if any shall be brought out giving valid reasons.	
16.	All the items shall be guaranteed against any manufacturing defects for a period of 12 months from the date of commissioning.	
<b>Technical Terms</b>		
1.	The details shown in the drawings shall be verified and changes if any required shall be incorporated after obtaining written clearance from the department.	
2.	Quality assurance plan for fabrication and testing w.r.t to all the items shall be submitted	
3.	Quality records, history docket and all documentation related to manufacturing, inspection, testing and erection shall be maintained during realisation and submitted after completion.	
4.	DP test for root and final weld.	
5.	UT testing of raw material.	
6.	100% X-ray testing of all butt welds.	
7.	Thermal Stress Relieving shall be carried out as per details given in the tender document.	
8.	Fabrication and machining will be carried out on parts as per details given in tender document and drawing.	
9.	Sand blasting and painting shall be carried out as per the details provided in the tender document.	
10.	All tolerances mentioned in the drawing and tender document shall be achieved. Wherever tolerance is not specified, open tolerance mentioned in the drawing shall be followed.	
11.	Bidder shall indicate clearly list of works planned to offload to his sub-vendor. In such cases, details of works and sub-vendors shall be provided.	
12.	<b>Suitable CNC machine with automatic indexing shall be used for completing the final machining of NES mandrel (dwg no.10-03-</b>	

S. No.	Description	Bidder's compliance Yes/No
	SSLV-03-015/A1/R1 (2 sheets)) core and fin area in a single setting <b>(in-situ)</b> . The machine shall accommodate the entire job length and machining shall be carried out on the entire length. Bidder shall confirm the same.	
13.	The mandrel fin surface shall be 3D scanned using CMM scanner after completion of final machining. The scanned surface shall be compared with the standard 3D model and report to be submitted by the bidder.	

## Quality Assurance Plan for SS1 NES Mandrel

S.No	Characteristics/ type of checks	Quantum of check	Reference document	Acceptance norms	Formats of record	Party	SHAR	Remarks
1	3	4	5	6	7	8	9	10
<b>Raw material identification</b>								
1.	Visual & dimensional	100%	Drawing	Drawing	Material inspection report		R	
2.	Manufacturers TC verification with material specification/ drawings.	100%	ASME sec II part A/ IS 2062	ASME sec II part A/ IS 2062			R	
3.	Chemical properties Mechanical properties		Drawing	Drawing	Mill TC			
4.	UT for plate thickness 20mm and above	100%	ASTM A 435	ASTM A 435	UT report		R	
5.	Identification mark verification and transfer of identification						R	
6.	<b>Welding procedure qualification</b>							
7.	Verification of WPS and WPQR	100%	WPS & WPQR	ASME SEC IX	WPS & WPQR		R	
<b>Fabrication</b>								
8.	Marking and cutting Dimensions and bevel preparation	100%	DRAWING	DRAWING	---		R	
9.	Fit-up inspection - Dimensions bevel details mismatch	100%	DRAWING	DRAWING	Fit up report		R	
10.	DPT on root and final pass	100%	ASME Sec -5, Art - 6	ASME SEC VIII, App 8	DPT report		R	

S.No	Characteristics/ type of checks	Quantum of check	Reference document	Acceptance norms	Formats of record	Party	SHAR	Remarks
1	3	4	5	6	7	8	9	10
11.	PT on back grinding	100%	ASME Sec -5, Art - 6	ASME SEC VIII, App 8	DPT report		R	
12.	RT on butt welds for plate thickness 20mm or more	100%	Drawing & PO	ASME SEC VIII, Div – 1, UW 51	RT Report		R	
13.	Heat treatment – review of SR charts		ASME SEC VIII, Div – 1, UW - 40	ASME SEC VIII, Div – 1, UCS- 56	H.T. chart		R	
<b>Machining</b>								
14.	All dimensions, Run-out, Face out, DRO co- ordinates check etc., – On machine inspection	100%	Drawing Specification	Drawing Specification	On- machine inspection report		W	
<b>Surface Perpetration &amp; Painting</b>								
15.	Visual Paint thickness measurement		Drawing Specification	Drawing Specification	Painting report		R	
<b>Final Certification</b>								
16.	Hard Stamping Document Verification, final inspection	100%	Drawing Specification	Drawing Specification	Inspection release note		W	

**Manufacturer Quality Records**

1. Manufacturer certificate
2. Material traceability summary sheet
3. Material test certificate
4. NDT Examination Reports
5. Final Dimensional Reports
6. Heat treatment chart
7. Hard stamp rub-off details

**Note:**

1. All NDT procedure shall be submitted for approval
2. Material of construction as per approved drawings
3. All requirements specified/approved drawings/specifications and applicable codes shall be fully complied.
4. Job specific heat treatment, thermal stress relieving procedures shall be submitted for review and approval.
5. Final painting shall be carried out after completion of load test at SDSC SHAR.

**Legends**

H	-	Hold
R	-	Review
W	-	Witness
MTC	-	Material test certificate
TC	-	Test certificate
UT	-	Ultrasonic Test
RT	-	Radiography test
MPI	-	Magnetic particle test
DPT	-	Dye penetrant test

**NOTE:** This is only indicative. Bidder shall prepare QAP with respect to each item based on manufacturing process plan covering the minimum guidelines / requirements given in the format.

**Deviation Table**

<b>S. No.</b>	<b>Tender Specification</b>	<b>Deviations</b>	<b>Reason for Deviations</b>

## Price Bid Schedule for SS1 NES Mandrel as per Technical Specifications and terms & conditions given in Tender

Tender No. & Date:

Bidder's Quotation No. & Date:

**Note:**

1. Bidder shall also submit the un-priced Format along with Techno – Commercial Bid by mentioning “quoted” against each item. The same shall be uploaded along with technical specification.
2. The price bid should be submitted only as per the given below format. No row shall be left blank. Indicate "NA" in case the item is “not applicable”.
3. Price shall be submitted on-line covering all the below components. Any un-filled price bid is likely to get rejected.

**Bidder shall submit following un-priced format:**

S. No.	Description	Quantity	Party's Confirmation
1.	Basic Price for SS1 nozzle End Segment mandrel (dwg no. 10-03-SSLV-03-015/A1/R1, 2 sheets, 10-03-SSLV-09-001/A1 (2 sheets) and 10-03-SSLV-09-006/A1), FOR Sriharikota as per specifications provided in the tender document.	01 Set	
2.	GST for S.No.: 1.	% of supply value	
3.	Total Value including taxes & duties		

Date:

Signature & Office Seal of the bidder